

U.S. Patent application 10/053,260

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Response to U.S. Patent office action dated 07/14/2004

AMENDED CLAIMS

What I claim is:

1-12 (canceled)

13. (amended) A threaded hole finishing tool comprised of :

A deburring tool for use in conjunction with a threading tap having spiral or helical flutes~~[[, said]]~~ and that deburring device tool being comprised of a cutter body having cutting members of a spiral or helical nature conforming to the spiral or helical nature of the flutes in said threading tap, said cutting members having guiding following edges (25) and (26) ~~at their contact point with the taps flutes~~ that are separated by an inside surface that allow the cutting body to axially move up and down along the ~~taps flutes~~ tap's flutes and simultaneously rotate with the helical nature of the ~~taps flutes~~ tap's flutes while not engaging the ~~taps cutting edge~~ tap's cutting edges (28) and ~~or non-cutting edge~~ non-cutting edges (27) while being resiliently held to said tap by means of a spring ~~or similar resilient component~~ which urges said cutter body towards the cutting end of said tap.

14. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle greater than ~~the critical angle of~~ 45 degrees and less than 60 degrees and where the cutting edge (30R) of the deburring tool is ground to cut in the same direction as the ~~[[taps]]~~ tap's cutting direction. ~~and as the taps rotational direction is reversed for removal from the~~

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~~hole the deburring tools relieved non-cutting edge rides in contact with the threaded holes top surface~~

15. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle less than ~~the critical angle of~~ 45 degrees and more than 5 degrees and where ~~the non-cutting relieved edge of~~ the deburring tool rides the top surface of the hole as it is being threaded and when the rotational direction of the tap is reversed ~~the cutting edge of the deburring tools~~ deburring tool's cutting members, which are ground to cut in the opposite direction as that of the tap ~~would cut removes~~ remove material from the top of the hole.

16. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle less than ~~the critical angle of~~ 45 degrees and more than 5 degrees and the cutting edge ~~of the~~ deburring tool is ground to cut in the same direction as the ~~[[taps]]~~ tap's cutting direction. ~~and as the taps rotational direction is reversed for removal from the hole the deburring tools relieved non-cutting edge rides in contact with the threaded holes top surface.~~

17. (amended) A deburring tool as described in claim 13, wherein in which said threading tap is a combination drill and tap.

18. (amended) A deburring tool as described in claim 14-16, wherein 14, 15, or 16, in which said threading tap is a combination drill and tap.

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19. (canceled)

20. (canceled)

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Response to office action objections of July 14, 2004

In regard to the rejections of claims 13-20 filed on February 23, 2004 my response is as follows:

1. "contact point" not having antecedent basis :

This term has been removed from claim 13.

2. Scope of "similar resilient component" can not be determined:

This has also been removed from claim 13.

3. "cutting edge" and "non-cutting edge" of the tap in claim 13 , do not have antecedent basis:

These are both described in paragraph 0033 in the application publication US 2003/0138302 A1 and are referenced to in Fig 5. as "cutting edges" 28 and "non-cutting edges" 27.

They remain in claim 13, though I have changed them from singular to plural , they now conform to the written description in the patent application. Reference numbers have also been added to the claim for them.

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4. "critical angle" of claims 14,15 and 16 do not have antecedent basis:

The "critical angle" is described in application in paragraph 0008 and 0043. I agree the scope of the description is vague. I have removed it from the claims.

5. "cutting edge" of the deburring tool in claims 14-16 do not have antecedent basis:

The deburring tool's cutting edge is described in paragraphs 0035, 0036, 0037, and 0038 of the patent application publication.

It has been left in claim 14 and a reference number has been added. It could be remove from the claim if necessary. It has been removed from claims 15 and 16.

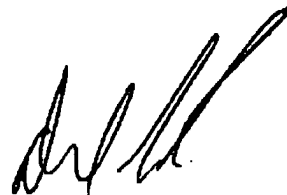
6. The "relieved non-cutting edge" of claims 14 and 16 and the "non-cutting relieved edge" of claim 15 do not have antecedent basis:

These have all been removed from claims 14, 15 and 16.

7. An additional change has been made to claim 13; "guiding" has been removed and replaced with "following". The claim will now conform to the written description of these edges in paragraph 0032 of the application.

David P. Newmark
Vernon Devices inc.
111 Plain Ave
New Rochelle NY 10801
(914) 633 0038

Respectfully Submitted,



David P. Newmark
Applicant/Inventor
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